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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,314	09/28/2005	Lucas Josef Maria Schlangen	NL 030315	6534
24737 7590 10/31/2007 PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510			EXAMINER ZUBAJLO, JENNIFER L	
			ART UNIT 2629	PAPER NUMBER
			MAIL DATE 10/31/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/551,314	SCHLANGEN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jennifer Zubajlo	2629	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 September 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 14-16 is/are rejected.
- 7) ☒ Claim(s) 12 and 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/17/2007</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Specification*

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

#### Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, and 4-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paul Drzaic (Pub. No.: US 2002/0180688 A1).

As to claim 1, Drzaic teaches: A color electrophoretic display (see [0002]) comprising: pixels each comprising different types of particles having different colors and different electrophoretic mobilities (see figures 3F-3H & [0099]), and a driver for supplying drive voltages (see figures 3F-3H, [0099] & [0113]) to the pixels to operate the color electrophoretic display either in: a first mode wherein all the types of particles contribute to a change of color of at least some of the pixels (see figures 3 & 6B & [0099]-[0103]), or a second mode wherein only a subset of the types of particles contribute to the change of the color of at least some of the pixels (see figures 3 & 6B & [0099]-[0103] & also note that "all the types of particles" are also "a subset of the types of particles" – all particles contribute to the change of color and even if the "subset of the types of particles" is defined such that it is not identical with "all the types of particles" it is obviously understood that even the particles which do not form part of said subset "contribute to the change of color" – for example by being not moved or by being removed).

As to claim 14, Drzaic teaches: A method of driving a color electrophoretic display (see [0002]) having pixels comprising different types of particles having different colors and different electrophoretic mobilities (see figures 3F-3H & [0099]), the method comprising supplying drive voltages (figures 3F-3H & [0099]) to the pixels to operate the color electrophoretic display either in: a first mode wherein all the types of particles contribute to a change of color of at least some of the pixels (see figures 3 & 6B & [0099]-[0103]), or a second mode wherein only a subset of the types of particles contribute to the change of the color of at least some of the pixels (see figures 3 & 6B & [0099]-[0103] & also note that “all the types of particles” are also “a subset of the types of particles” – all particles contribute to the change of color and even if the “subset of the types of particles” is defined such that it is not identical with “all the types of particles” it is obviously understood that even the particles which do not form part of said subset “contribute to the change of color” – for example by being not moved or by being removed).

As to claim 2, Drzaic teaches a color electrophoretic display as claimed in claim 1 (see above rejection), and also teaches wherein the pixels each comprise an image volume and a reservoir volume (see [0069]), and wherein the different types of particles determine a visible color of the pixel when present in the image volume, and wherein the particles do not contribute to the visible color of the pixel when present in the reservoir volume (see figures 3, [0069] & [0099]).

As to claim 4, Drzaic teaches a color electrophoretic display as claimed in claim 2 (see above rejection), wherein the reservoir volume comprises select electrodes for generating a select electric field in the reservoir volume (see figures 3F-3I & 3K – elements 35, 45, 35', 45', 35'', 45'' & [0069], [0099]-[0101], wherein the image volume comprises fill electrodes for generating a fill electric field in the image volume (see figures 3F-3I – element 42 & [0099]-[0101]), the select electric field extending in a first direction, the fill electric field extending in a second direction not being aligned with the first direction (see figures 3F-3I & 3K – direction of fields between elements 35 & 45 are not aligned with direction of fields between elements 42 & 35 (or 45)), and wherein the particles are able to move from the reservoir volume to the image volume only locally along a distance between the select electrodes, the driver being adapted to supply voltage pulses to the select electrodes and the fill electrodes to move the different groups of particles sequentially into the image volume (see [0099]-[0101]).

As to claim 5, Drzaic teaches a color electrophoretic display as claimed in claim 4 (see above rejection), wherein the driver is adapted for selecting only a single one of the different types of particles during the second mode, and to move these particles into the image volume in accordance with a monochrome image to be displayed (see figure 3I – only R particles are selected).

As to claim 6, Drzaic teaches a color electrophoretic display as claimed in claim 5 (see above rejection). Drzaic teaches that the particles having different colours have different mobilities (see [0101] & [0108]). It would be obvious to one skilled in the art at the time of the invention to select each type of particle as the single one of the different types of particles depending on the colour in which the monochrome image is to be displayed, the skilled person would automatically select the particles having the highest mobility when the image is to be displayed in their color (see figure 3I).

As to claim 7, Drzaic teaches a color electrophoretic display as claimed in claim 2 (see above rejection), further comprising select electrodes for generating in the reservoir volume a select electric field for separating the different types of particles in different sub-volumes in the reservoir volume (see figures 3F-3I & 3K – elements 35, 45, 35', 45', 35'', 45'' & [0099]-[0101]), and at least one fill electrode for generating a fill electric field to move the different types of particles from the sub-volumes into the image volume (see figures 3F-3I – element 42 in combination with elements 35, 45, 35', 45', 35'', 45'' & [0099]-[0101]).

As to claim 8, Drzaic teaches an electrophoretic display as claimed in claim 7 (see above rejection), wherein the at least one fill electrode is positioned to obtain the fill electric field directed for simultaneously moving the different types of particles from the sub-volumes into the image volume (see figures 3F-3I – element 42 & [0099]-[0101]).

As to claim 9, Drzaic teaches an electrophoretic display as claimed in claim 7 (see above rejection), wherein the fill electrodes comprise sub fill electrodes associated with the different sub-volumes for generating the fill electric field to comprise sub fill electric fields in the different sub-volumes (see figure 3I – element 42 in combination with elements 35, 45, 35', 45', 35'', 45'' & [0099]-[0101]).

As to claim 10, Drzaic teaches an electrophoretic display as claimed in claim 7 (see above rejection), further comprising: a further reservoir volume, further select electrodes for generating in the further reservoir volume a further select electric field for separating the different types of particles in further different sub-volumes in the further reservoir volume, and further fill electrodes for generating a further fill electric field to simultaneously or time sequentially move the different types of particles from the further sub-volumes into the image volume (see [0015]).

As to claim 11, Drzaic teaches an electrophoretic display as claimed in claim 7 (see above rejection), wherein the electrophoretic display comprises a controller for controlling the first mentioned select electrodes, the at least one first mentioned fill electrode, the further select electrodes, and the further fill electrodes to obtain a separation of the different types of particles in the first mentioned reservoir volume simultaneously to filling or resetting particles to or from the further reservoir volume, or the other way around (see figures 3F-3I & [0113]). A skilled person would apply a controller to control the electrodes.



As to claim 15, Drzaic teaches a method as claimed in claim 14 (see above rejection), wherein the pixels each comprise an image volume and a reservoir volume (see [0069] – “the top electrode may be masked so that the clustered particles are not visible”), and wherein the particles determine a visible color of the pixel when present in the image volume, and wherein the particles do not contribute to the visible color of the pixel when present in the reservoir volume (see figure 3, [0069] & [0099]).

As to claim 16, Drzaic teaches a display apparatus comprising a color electrophoretic display (see [0002]) as claimed in claim 1 (see above rejection).

3. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holly G. Gates (Patent No.: US 6,531,997 B1).

As to claim 1, Gates teaches: A color electrophoretic display (see title, figures 5-8, and column 9 lines 31-33) comprising: pixels each comprising different types of particles having different colors and different electrophoretic mobilities (see figures 5-8 & column 24 line 5 – column 25 line 67), and a driver for supplying drive voltages (see see figures 10-14) to the pixels to operate the color electrophoretic display either in: a first mode wherein all the types of particles contribute to a change of color of at least some of the pixels (see figures 5-8), or a second mode wherein only a subset of the types of particles contribute to the change of the color of at least some of the pixels (see

Art Unit: 2629

figures 5-8 & also note that “all the types of particles” are also “a subset of the types of particles” – all particles contribute to the change of color and even if the “subset of the types of particles” is defined such that it is not identical with “all the types of particles” it is understood that even the particles which do not form part of said subset “contribute to the change of color” – for example by being not moved or by being removed).

As to claim 3, Gates teaches a color electrophoretic display as claimed in claim 1 (see above rejection). Gates teaches the use of particles having different speeds due to different mobilities (see column 2 lines 53-62) which is linked to the refresh rate (see column 24 lines 5-42) and which can be adapted to the needs (see figures 10-14). Therefore, it would have been obvious to one skilled in the art at the time of the invention to apply a driver comprising means for adapting a refresh rate of the electrophoretic display for faster particles (during the second mode) to obtain a display of the video information (see figure 11) with a second refresh rate being higher than the first refresh rate for slower particles (which is occurring in the first mode).

### ***Double Patenting***

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir.

Art Unit: 2629

1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1, 2, 7, 8, 9, 10, 11, 14, 15, and 16 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 3, 10, 11, 20, and 21 of U.S. Publication No. 2006/0209009 A1 in view of Paul Drzaic (Pub. No.: US 2002/0180688 A1).

Drzaic teaches the limitations of independent claims 1 and 14 as described above.

US Pub. No. 2006/0209009 claim 1 lines 3-10 teach the limitations as outlined in Applicant's claim 2 when combined with the teachings of Drzaic.

US Pub. No. 2006/0209009 claim 1 lines 11-19 teach the limitations as outlined in Applicant's claim 7 when combined with the teachings of Drzaic.

US Pub. No. 2006/0209009 claim 2 teaches the limitations as outlined in Applicant's claim 8 when combined with the teachings of Drzaic.

US Pub. No. 2006/0209009 claim 10 teaches the limitations as outlined in Applicant's claim 10 when combined with the teachings of Drzaic.

US Pub. No. 2006/0209009 claim 11 teaches the limitations as outlined in Applicant's claim 11 when combined with the teachings of Drzaic.

US Pub. No. 2006/0209009 claim 20 lines 4-10 teach the limitations as outlined in Applicant's claim 15 when combined with the teachings of Drzaic.

US Pub. No. 2006/0209009 claim 21 teaches the limitations as outlined in Applicant's claim 16 when combined with the teachings of Drzaic.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of the driving of Drzaic with the structure of U.S. Publication No. 2006/0209009 A1 in order to make a more efficient display.

#### ***Allowable Subject Matter***

6. Claims 12 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Zubajlo whose telephone number is (571) 270-1551. The examiner can normally be reached on Monday-Friday, 8 am - 5 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on (571) 272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2629

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JZ  
10/22/2007

  
AMARE MENGISTU  
SUPERVISORY PATENT EXAMINER